operon.

The nucleotide sequences of the various genes of the PQQ operon were determined, and are set forth in SEQ ID NOs: 2 to 6. Mapping data presented in Figure 13 indicate 5 the relative arrangement of the genes of the PQQ operon of *Pseudomonas sp.* compared to other bacteria.

REFERENCES

- 10 1. Amann and Brosius (1985). Gene 40: 183.
 - 2. An, et al. (1985) EMBO J. 4:277-284.
 - 3. Armstrong, et al.(1990) Plant Cell Rep. 9: 335-339.
 - 4. Aszalos, A., et al. (1968) J. Chromatography 37: 487-498.
 - 5. Ausubel, et al. (1987) In: Curr.Protocol.Mol.Biol. Wiley Interscience.
- 15 6. Baker, K. F. et al (1974) Biol. control plant pathogens, W.H. Freeman and Co., USA.
 - 7. Buyer, J. S. et al. (1986) J. Biol. Chem. 261: 791-794.
 - 8. Christou, et al. (1988) Plant Physiol. 87: 671-674.
 - 9. Crossway, et al. (1986) Mol. Gen. Genet. 202:179-185.
- 20 10. Devereux, J., et al. (1984) Nucl. Acids Res. 12: 387-395.
 - 11. Fravel, D. R. (1988) Ann. Rev. Phytopathol. 26: 75-91.
 - 12. Gal A.E. (1968) Anal. Biochem. 24: 452-461.
 - Gennaro, A. R. (1990) *In:* Remington's Pharmaceutical Sciences, 18th edition,
 Mack Publishing Company, Easton, Pennsylvania 18042, USA, pp 1266-1268.
- 25 14. Ghebregzabher, et al. (1976) J. Chrom. 127: 133-162.
 - 15. Gurusiddaiah S., et al.(1986) Antimicrob. Agent. Chemother. 29: 488-495.
 - 16. Hamdan, H., et al. (1991) App. Environ. Microbiol. 57: 3270-3277.
 - 17. Fromm, et al. (1985) Proc. Natl. Acad. Sci. (USA) 82: 5824-5828.
 - 18. Hanahan (1983) _
- 30 19. Herrera-Estella et al. (1983a) Nature 303: 209-213.
 - 20. Herrera-Estella et al. (1983b) EMBO J. 2: 987-995.

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